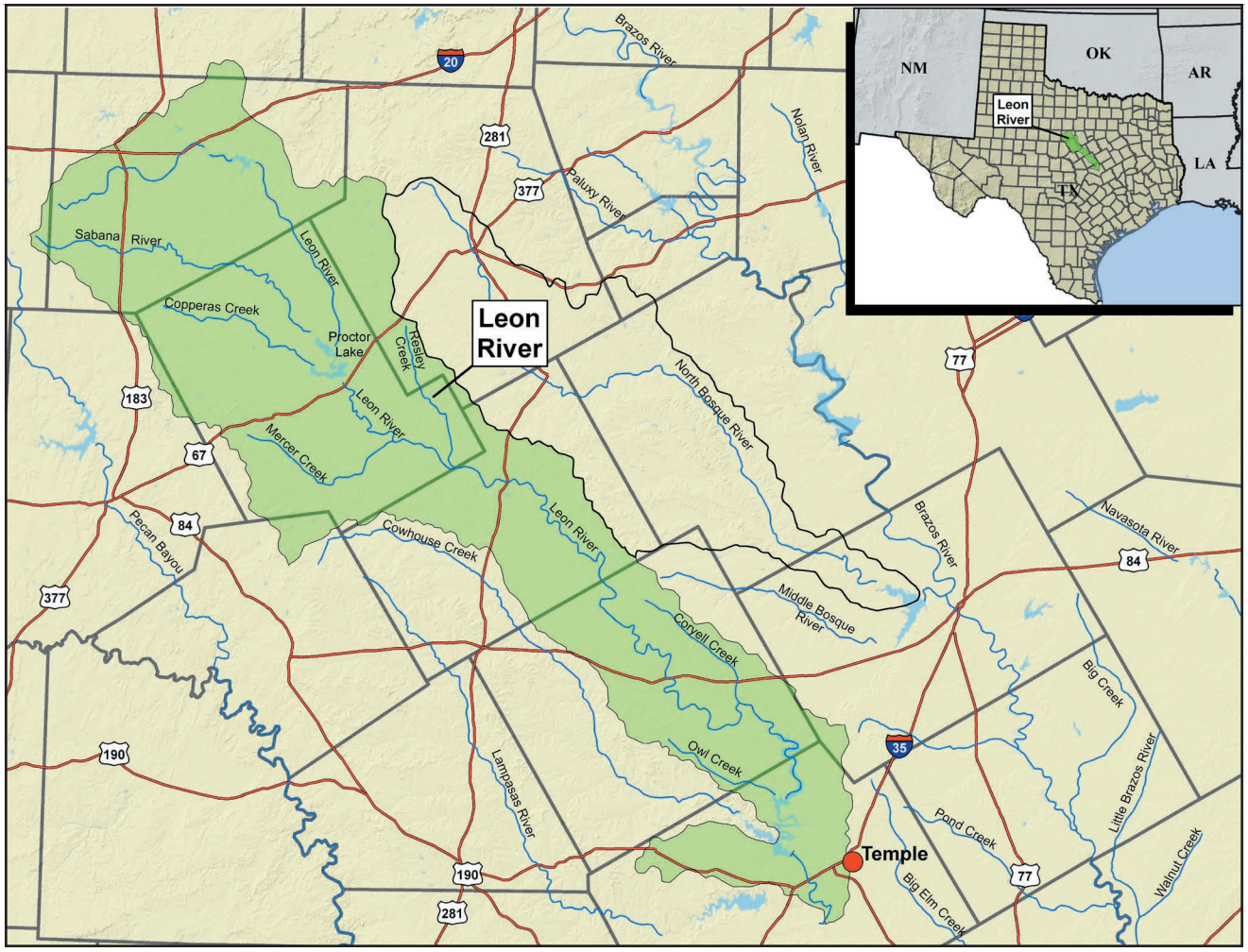
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Watershed Fact Sheet

Leon River Watershed, Texas: 2004-2006

An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Quantify the effects of management practices on soil quality and water quality and quantity; examine watershed-scale impacts and transport mechanisms; and determine the field-scale effects of selected management practices.

Watershed Description

- 1.5 million acres
- Drains into Lake Belton, a large reservoir that provides water for about 200,000 people.
- 68% pasture, 11% crop land
- Approximately 100 Confined Animal-Feeding Operations (CAFO).
- Impaired water quality parameter: bacteria

Issues: Water quality and soil quality impairments are generally associated with the CAFO units and the management and disposal of animal wastes and municipal wastewater. Water quality impairment results from runoff and point source discharge contaminated with pathogens and /or nutrients. Changes in soil quality are linked to carbon and nutrient availability and distribution in the soil, and changes in the soil water holding capacity.

**Agricultural Research Service*

Native prairie site instrumented to collect reference water quality data near Riesel, Texas.

View upstream from a control structure on a small watershed site near Riesel, Texas.

Streamflow measurement on Mustang Creek, a tributary of the Upper Leon River, Texas.

Approach

Water Sampling and Monitoring: Flow, dissolved nutrients (nitrate, ammonia, and phosphorus), suspended sediment, and bacteria.

Watershed Models: SWAT (Soil and Water Assessment Tool)

Assess Practices: manure management and tillage practices

Communicating Results

Reports documenting impact of selected nutrient management practices on water quality, the impact of animal waste on soil quality, and soil water-holding capacity.

Collaborators

- USDA Natural Resources Conservation Service
- U.S. Geological Survey
- Texas State Soil and Water Conservation Board
- Texas Agricultural Experiment Station
- Texas Cooperative Extension
- Brazos River Authority

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